# DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

# LAKE TROPHIC DATA

## MORPHOMETRIC:

Lake: PEQUAWKET POND	Lake Area (ha): 57.79
Town: CONWAY	Maximum depth (m): 16.5
County: Carroll	Mean depth (m): 3.9
River Basin: Saco	Volume (m <sup>3</sup> ): 2236500
Latitude: 43°58'12" N	Relative depth: 1.9
Longitude: 71°08'28" W	Shore configuration: 3.71
Elevation (ft): 458	Areal water load (m/yr): 71.70
Shore length (m): 10000	Flushing rate $(yr^{-1})$ : 18.50
Watershed area (ha): 7096.6	P retention coeff.: 0.29
% watershed ponded: 1.7	Lake type: natural w/dam

BIOLOGICAL:	7 February 1994	5 August 1993
DOM. PHYTOPLANKTON (% TOTAL) #3	. SPARSE - NO DOMINANT	RHIZOSOLENIA 45%
#2		CHRYSOSPHAERELLA 15%
#-	3	UROGLENOPSIS 15%
PHYTOPLANKTON ABUNDANCE (cells/mL		765
CHLOROPHYLL-A (µg/L)		2.01
DOM. ZOOPLANKTON (% TOTAL) #	SPARSE - NO DOMINANT	NAUPLIUS LARVA 25%
#:	2	KERATELLA 18%
#.	3	
ROTIFERS/LITER	11	20
MICROCRUSTACEA/LITER	4	37
ZOOPLANKTON ABUNDANCE (#/L)	15	67
VASCULAR PLANT ABUNDANCE		Common
SECCHI DISK TRANSPARENCY (m)		4.8
BOTTOM DISSOLVED OXYGEN (mg/L)	8.4	0.4
BACTERIA (E. coli, #/100 ml) #	1	3
#	2	
#	3	

# SUMMER THERMAL STRATIFICATION:

#### stratified

Depth of thermocline (m): 5.2 Hypolimnion volume (m³): 642000 Anoxic volume (m³): 70000

HEMICAL:			PEQUAWKET	POND	
	7 February 1994 5 August 199			)3	
DEPTH (m)	4.0	8.0	1.0	5.0	12.0
pH (units)	6.2	6.3	7.1	6.6	6.3
A.N.C. (Alkalinity)	7.2	7.9	7.5	8.7	7.4
NITRATE NITROGEN	0.07	0.11	< 0.02		0.19
TOTAL KJELDAHL NITROGEN	0.17	0.17	0.24	0.70	0.23
TOTAL PHOSPHORUS	0.003	0.004	0.005	0.012	0.010
CONDUCTIVITY (µmhos/cm)	56.3	60.4	59.6	58.4	60.9
APPARENT COLOR (cpu)	19	23	23	23	32
MAGNESIUM	·		0.45		
CALCIUM			3.7		·
SODIUM			6.7		
POTASSIUM			0.54		
CHLORIDE	9	10	10		10
SULFATE	3	3	3		2
TN : TP	80	70	48	· · · · · · · · · · · · · · · · · · ·	42
CALCITE SATURATION INDEX			2.8		

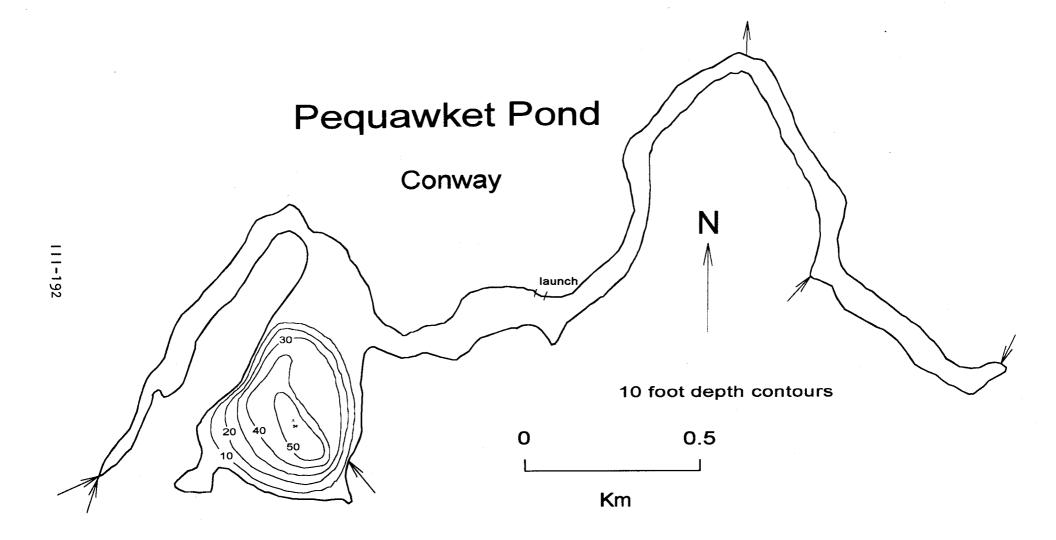
All results in mg/L unless indicated otherwise

#### TROPHIC CLASSIFICATION: 1993

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
5	2	3	0	10	Meso.

#### **COMMENTS:**

- 1. This pond was previously surveyed and classified in 1981. The trophic rating changed from oligotrophic to mesotrophic. The change was due primarily to a decrease in the bottom dissolved oxygen from 5 to less than 1 mg/L. The 1993 sample was collected later in the summer and at a deeper depth, which may at least partially explain the decrease. Some trophic indicators (water clarity, phosphorus) were actually better in 1993 while others (chlorophyll, vascular plants) remained unchanged between the two dates.
- 2. This is a uniquely shaped pond, consisting of an open deep area and long, narrow river-like channels.
- 3. The channels were approximately 5 feet deep; navigation was difficult because of the abundant emergent and submerged plant growth.
- 4. The blue-green alga <u>Merismopedia</u> was the dominant (25%) genera of wholewater phytoplankton. Greens (40%) and blue-greens (40%) were the dominant classes.



## FIELD DATA SHEET

LAKE: PEQUAWKET POND TOWN: CONWAY

DATE: 08/05/93 WEATHER: PARTLY SUNNY & BREEZY

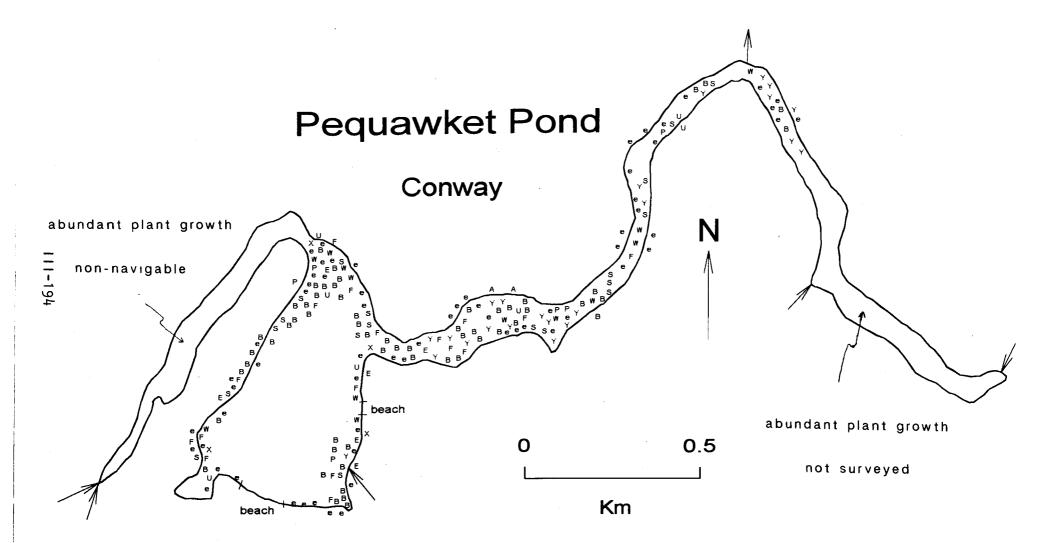
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION		
0.1	23.9	8.3	96 %		
1.0	23.9	8.2	95 %		
2.0	23.5	8.3	96 %		
3.0	21.2	8.4	94 %		
4.0	17.6	13.4	138 %		
5.0	13.2	12.9	120 %		
6.0	8.4	11.6	97 %		
7.0	7.0	10.1	83 %		
8.0	5.9	8.7	67 %		
9.0	5.0	5.8	45 %		
10.0	4.5	4.5	34 %		
11.0	4.2	2.6	20 %		
12.0	4.2	1.6	12 %		
13.0	4.0	0.8	6 %		
14.0	4.0	0.3	2 %		
15.0	4.0	0.3	2 %		
16.0	4.0	0.4	3 %		
			·		

SECCHI DISK (m): 4.8 COMMENTS:

BOTTOM DEPTH (m): 16.2

TIME: 1300

\*Dissolved oxygen values are in mg/L



#### AQUATIC PLANT SURVEY

LAK	E: PEQUAWKET POND	TOWN: CONWAY	DATE: 08/05/93
Key	PLANT	ABUNDANCE	
Key	GENERIC	COMMON	ABUNDANCE
В	Brasenia schreberi	Water shield	Common
Y	Nuphar	Yellow water lily	Scattered
ប	Utricularia	Bladderwort	Scattered
A	Sagittaria	Arrowhead	Sparse
P	Pontederia cordata	Pickerelweed	Scattered
е	Eleocharis	Spike rush	Common
S	Sparganium	Bur reed	Scattered
W	Potamogeton	Pondweed	Scattered
F	Nymphoides cordatum	Floating heart	Scattered
d	Dulichium arundinaceum	Three-way sedge	Sparse
Х		Sterile thread-like leaf	Common
E	Eriocaulon septangulare	Pipewort	Sparse
			·
			<u> </u>

# OVERALL ABUNDANCE: Common

# **GENERAL OBSERVATIONS:**

- 1. Plants were scattered in the open pond area but were very abundant in the narrow channels, for an overall rating of common.
- 2. Space limitations on the map did not allow for the listing of all the plants observed in the channels. All 12 species were observed in the channels, and the submerged plants bladderwort and sterile thread-like leaves were particularly abundant.
- 3. At least three different species of <u>Potamogeton</u> were observed but were not depicted separately.